WHAT IS CLAIMED IS: (US CLAIM)

1. A fuel cell separator comprising:

a metallic substrate having an oxide film forming a surface thereof and made by an oxidization of a material of the substrate; and

an electrically conductive thin film formed on a surface of the oxide film of the substrate.

2. The separator according to claim 1, wherein the oxide film is formed by placing the substrate in air or in an oxidizing atmosphere.

3. The separator according to claim 1, wherein the electrically conductive thin film is a metal thin film.

4. The separator according to claim 1, wherein the electrically conductive thin film is a noble metal thin film.

5. The separator according to claim 1, wherein the electrically conductive thin film is a carbon thin film formed of carbon (C) at an atomic level.

6. The separator according to claim 1, further comprising an intermediate layer for enhancing adhesion which is provided between the oxide film of the substrate and the electrically conductive thin film.

7. The separator according to claim 6,

wherein the electrically conductive thin film is a metal thin film, and

wherein the intermediate layer is an Me layer formed of at least one element selected from the group consisting of the metal elements of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo and W and the metalloid elements of Si and B.

8. The separator according to claim 6,

wherein the electrically conductive thin film is a carbon thin film formed of carbon (C) at an atomic level, and

wherein the intermediate layer is formed by at least one layer of an Me layer formed of at least one element selected from the group consisting of the metal

elements of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo and W and the metalloid elements of Si and B, and a carbon-Me gradient layer which is formed on the Me layer and which contains carbon (C) and an a metal or metalloid element (Me) and in which a proportion of carbon (C) increases with increasing distance from the substrate.

9. The separator according to claim 1, further comprising a carbon coating film on a surface of the electrically conductive thin film.

10. A method of producing a fuel cell separator comprising :

providing a substrate;

providing an oxide film forming a surface of the substrate by oxidizing a material of the substrate; and

forming an electrically conductive thin film on a surface of the oxide film of the substrate.

11. The method according to claim 10, wherein providing the oxide film comprises placing the substrate in air or in an oxidizing atmosphere.

12. The method according to claim 10, wherein the electrically conductive thin film is a metal thin film.

13. The method according to claim 10, wherein the electrically conductive thin film is a noble metal thin film.

14. The method according to claim 10, wherein the electrically conductive thin film is a carbon thin film formed of carbon (C) at an atomic level.

15. The method according to claim 10, further comprising forming an adhesion-enhancing intermediate layer between the oxide film of the substrate and the electrically conductive thin film.

16. The method according to claim 15,

wherein the electrically conductive thin film is a metal thin film, and

wherein the intermediate layer is an Me layer formed of at least one element selected from the group consisting of the metal elements of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo and W and the metalloid elements of Si and B.

17. The method according to claim 15,

wherein the electrically conductive thin film is a carbon thin film formed of carbon (C) at an atomic level, and

wherein the intermediate layer is formed by at least one layer of an Me layer formed of at least one element selected from the group consisting of the metal elements of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo and W and the metalloid elements of Si and B, and a carbon-Me gradient layer which is formed on the Me layer and which contains carbon (C) and a metal or metalloid element (Me) and in which a proportion of carbon (C) increases with increasing distance from the substrate.

18. The method according to claim 10, further comprising forming a carbon coating film on a surface of the electrically conductive thin film.